

Hotels in Paramaribo cannot be said to be very good, though they are not expensive; the average price per day is fl. 5 (\$2). In the interior there do not exist hotels or boarding-houses; whoever cannot be the guest of a planter or other European living in the interior will have to carry with him a hammock, tinned food, and other necessities. If we estimate for traveling and other smaller expenses \$200, for clothing \$100-\$150, a four-months stay would cost about \$540-\$600 plus the steamship fares. There are several direct lines from the United States to Barbados, whence every fortnight a steamer of the Royal Mail Steampacket Company sails for Demerara and Paramaribo in about four or five days. The Dutch mail steamers of the Koninklijke West-Indische Maildienst (Royal Dutch West-Indian Mail Service) sail twice a month from New York via Port-au-Prince, Aux Cayes, Jacmel, Curaçao, Puerto Cabello, La Guayra, Guanta, Cumaná, Carupano, Trinidad, and Demerara to Paramaribo, whence they proceed to Amsterdam. A first-class ticket from New York to Paramaribo costs \$100; a return ticket, available for a year, \$170. But the company is willing to give a reduction of 15 per cent. on this tariff to every naturalist who goes to Surinam with the aim of studying in the laboratory in Paramaribo. In order to get this reduction one has to make an application (with documents to prove this intention) to the agents of the company at New York (Kunhardt & Co.).

The average temperature at Paramaribo is 27° C. (max. 30-33°, min. 20-22° C.). The big rainy season lasts from the middle of April to the end of February; the dry seasons very often are not so very dry; the total amount of the rainfall is about 2,500<sup>mm</sup> yearly. The flowering times are about August, September, October, and from January till April. Whoever intends to make a stay in the new laboratory will have to apply to the agricultural inspector in Paramaribo, whose appointment will be made shortly and will be announced in the botanical journals; moreover, I am willing to give any further information.

—F. A. F. C. WENT, *University of Utrecht, Holland.*

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#### NEW OR LITTLE-KNOWN WOODY PLANTS.

*Crataegus hystericina*, n. sp.—A small irregular shrub 9-15<sup>dm</sup> high, with several stems from the same root. Bark on the slender stems rough, dark gray, that on the branches smooth and lighter. Twigs stout, red-brown, glabrous, armed with brown-purple thorns 4-6<sup>cm</sup> long. Leaves ovate or suborbicular, abruptly acute at apex, rounded or acute

at base, glabrous, with five or six pairs of prominent veins, sharply doubly serrate except at the base; petiole 2<sup>cm</sup> long, winged above by the decurrent blade. Flowers appear the first week in June, about 20<sup>mm</sup> wide, in ample wide-spreading glabrate or sparingly pubescent corymbs; calyx tube cup-shaped, glabrous, the narrow triangular glabrate acute lobes twice or thrice the length of the tube, deeply glandular serrate, reflexed after anthesis; stamens large, 10, anthers pale violet with darker edges; styles 2-3. Fruit in large drooping clusters, bright scarlet, globose, about 1<sup>cm</sup> in diameter, capped by the long spreading or reflexed calyx lobes, ripening in September; seeds generally 3, lateral faces grooved.

*Crataegus hystricina* has been found only along the rocky bank of the Housatonic river in Southern Connecticut, where it has been collected and studied by *Dr. E. H. Eames*. It is evidently closely related to *C. succulenta*, from which it is well separated by the larger foliage, larger flowers, fewer stamens and different habit.

**Amelanchier obovalis**, n. sp. *Mespilus Canadensis obovalis* Michx. Fl. 1:291; *Crataegus Canadensis obovalis* Sarg. Silva 4:128 in part.— A shrub 9-15<sup>dm</sup> high, with numerous erect virgate shoots, or a small tree with short ascending branches attaining a maximum height of about 4.5<sup>m</sup>. Leaves elliptic, rounded at both ends, 2-3<sup>cm</sup> wide, 3-5<sup>cm</sup> long, on unfolding densely tomentose beneath, at length nearly glabrous but pale, finely serrulate or nearly entire; petioles short, pubescent. Flowers appearing from the first to the middle of April when the leaves are less than half grown, in short (3-5<sup>cm</sup> long) 5-9-flowered, strict, compact, pubescent racemes; pedicels 2-9<sup>mm</sup> long at time of flowering, elongate in fruit, especially the lower ones, which become 2-3<sup>cm</sup> long; petals oblong, 6-8<sup>mm</sup> long; calyx broadly cup-shaped, the lobes erect or ascending, short and broad, pubescent, greatly enlarging after anthesis and becoming glabrate. Fruit when ripe in June red-purple, subglobose, 7-9<sup>mm</sup> in diameter.

This plant is not uncommon along the edges of swamps on loose soils from Smithfield, N. C., southward along the coast to Augusta, Ga., and according to Sargent (Silva 4:128 seq.) to Mobile, Ala. In leaf form and inflorescence, it is most closely related to *A. spicata* (Lam.) Dec., from which, however, it is well separated.

*Amelanchier obovalis* was found by the elder Michaux on the coast of Carolina. Torrey later transferred the name to *A. botryapium* and was followed by Sargent, who, while having knowledge of the existence and distribution of the coast plant, confused it with *A. botryapium* and associated both plants under the same name as a variety of *A. canadensis* med.

**Crataegus Wilkinsoni**, n. sp.—A tree 3–5<sup>m</sup> high with long horizontal branches forming a flattened crown, trunk armed with numerous long, often compound, thorns. Bark on the scaly trunk gray, that of the branches smoother and lighter. Twigs glabrous, slender, olive or russet, armed with many stout 4–6<sup>cm</sup> long dark gray thorns. Leaves spatulate, 5–9<sup>cm</sup> long including the very short petiole, 2–3<sup>cm</sup> wide, acute or obtuse at apex, gradually tapering into the short grooved winged petiole, glabrous, dark green above, much paler beneath, thin for the group, the 3–5 pairs of prominent veins impressed above, obtusely serrate above the middle, seldom lobed. Flowers about 14<sup>mm</sup> wide, in large compound many-flowered glabrous corymbs, appearing the first week of June; calyx obconic, glabrous, the narrow entire lobes reflexed after anthesis; stamens about 10, anthers pink; styles 2–3. Fruit in large compound clusters on drooping pedicels, oblong, 16–18<sup>mm</sup> long, full and rounded at the ends, dull red, capped by the reflexed calyx lobes, ripening early in October, persistent until late in winter; flesh firm, bitterish; seeds generally 2, sometimes 3, deeply grooved on the rounded back.

The species above proposed was collected in both flower and fruit at Mansfield, O., by *E. Wilkinson*, who has permitted me to associate his name with the plant; collected also in fruit by *W. W. Ashe*. It differs from the typical cockspur thorn in the longer, thinner, and more pointed leaves, and deeply impressed veins. It is more closely related to *C. Canybi* Sarg. (BOT. GAZ. 31:3. 1901) which it much resembles in the shape of the leaves, and the impressed veins, and from which it is separated by having longer, stouter thorns, thicker foliage, smaller fruit, and fewer differently colored anthers.

**Crataegus habilis**, n. sp.—A tree 4–6<sup>m</sup> high with numerous spreading and ascending branches forming an oval crown. Trunk sparingly armed, its bark scaly, trunk dark gray or brown, that of the branches smoother and lighter. Twigs ascending, glabrous, thick, soft, olivaceous or chestnut-brown, sparingly armed with stout chestnut thorns 3–4<sup>cm</sup> long. Leaves thin but firm, dark green above, paler beneath, the blades broadly oval, 4–5<sup>cm</sup> long, 3–4<sup>cm</sup> wide, abruptly acute at apex, rounded or truncate at base, with 4–6 pairs of shallow notches, sharply but finely serrate, glabrous below on unfolding, pubescent above with short hairs, soon glabrous, fading to lemon yellow and falling late in September or early in October; petiole about 2<sup>cm</sup> long, slender, nearly terete, grooved above, at first pubescent, soon glabrous. Flowers 16–20<sup>mm</sup> wide, borne in small 3–4<sup>cm</sup> wide, nearly simple pubescent cymes, cup-shaped, appearing the second week in May when the leaves

are about half grown; calyx cup-shaped, nearly glabrous, the large triangular glabrate deeply glandular serrate lobes spreading after anthesis; stamens large, generally 5, sometimes 5 to 8 or 10; anthers rose-purple; styles 4-5. Fruit in small 4-6 fruited somewhat compound clusters, on spreading or nodding pedicels, dull scarlet with orange spots at apex, globose, 14-17<sup>mm</sup> thick, concave at base, sometimes capped by the large spreading or ascending generally entire lobes, ripening early in September and falling soon after; flesh thick, yellow, juicy; seeds generally 4, somewhat grooved on the rounded back, the lateral faces plane.

The type material was collected at Mansfield, O., by *E. Wilkinson* and *W. W. Ashe* in 1901 and 1902, growing on sunny hillsides with oaks and hickories. *Crataegus habilis* is separated from the other FLABELLATAE having 5 to 10 stamens by the subglobose fruit, small deeply lobed foliage, and small short pediceled corymbs.

***Crataegus pentasperma*, n. sp.**—A tree 4-6<sup>m</sup> high with an oval crown and long spreading or pendent branches. Trunk armed with numerous thorns 4-6<sup>cm</sup> long, its bark nearly black, broken by shallow furrows or into small scales. Twigs slender, geniculate, at first pubescent, at length glabrate, armed with numerous thorns 3-5<sup>cm</sup> long. Leaves firm, bright green and glabrous above, pubescent beneath when young, at length nearly glabrous, except in the axils of the primary veins, the blades 2.5-4<sup>cm</sup> long, 1-2<sup>cm</sup> wide, obovate or spatulate, obtusely glandular serrate, rounded or acute at apex, often 3-5-notched above the middle, cuneate at the entire base, 1-3 pairs of ascending primary veins; petiole slender, 1-2<sup>cm</sup> long, pubescent and roughened with several pairs of dark glands (or the leaves on vigorous shoots nearly orbicular and deeply lobed, with persistent foliaceous stipules). Flowers small, in 5-10-flowered simple or somewhat compound villose corymbs, appearing in the vicinity of Franklin, N. C., the last of May; stamens small, 20; styles 5. Fruit in loose compound or simple clusters, on pendent pubescent pedicels, pyriform, longer than thick, 11-14<sup>mm</sup> long, green or green mottled with orange and red, occasionally capped by the stalked reflexed lanceolate villose glandular serrate calyx lobes; flesh thin, very firm and white; cavity small; seeds 5, 6<sup>mm</sup> long, smooth or nearly so in the back and faces, attenuate at base. The fruit ripens late in October and falls with the leaves or soon after.

*Crataegus pentasperma* is separated from the other GLANDULOSAE with 20 stamens, pyriform fruit, and pubescent inflorescence, by the larger, often compound cymes, and 5-seeded green fruit. The type material is from near Franklin, Macon county, N. C.—*W. W. ASHE, Raleigh, N. C.*